# MEETING RECORD

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| **NAME OF GROUP:** | PLANNING COMMISSION |
| **DATE, TIME AND PLACE OF MEETING:** | Wednesday, February 1, 2006, 11:30 a.m., Rm. 113, First Floor, County-City Building, 555 S. 10th Street, Lincoln, Nebraska |
| **MEMBERS IN ATTENDANCE:** | Jon Carlson, Gene Carroll, Dick Esseks, Mary Strand, Lynn Sunderman and Tommy Taylor; Gerry Krieser, Roger Larson, and Melinda Pearson absent |
| **OTHERS IN ATTENDANCE:** | Mike Piernicky of Olsson Associates; Kent Morgan, Mike DeKalb, Steve Henrichsen, David Cary, Sara Hartzell and Michele Abendroth of the Planning Department; Mike Brienzo, Randy Hoskins and Virendra Singh of Public Works & Utilities. |
| **STATED PURPOSE OF MEETING:** | **2005 Lincoln Metropolitan Area Travel Demand Model Documentation** |

The meeting was called to order at 11:35 a.m.

Virendra Singh began by stating that they are presenting the work to calibrate a new transportation model for the Lincoln area. The main objective of this project was to provide the MPO (Metropolitan Planning Organization) with a fully functioning and credible transportation model. The model that was chosen is TransCad. The project has two phases. Phase 1 is the model development and calibration validation. They hired the services of Olsson Associates as the prime consultant, along with Lima & Associates of Phoenix, Arizona. Mike Piernicky of Olsson Associates will present the results today.

Piernicky began the PowerPoint presentation with a brief overview of the contents of the presentation. He stated that the steering committee included the City of Lincoln Public Works Department, the City/County Planning Department, Lancaster County, the Nebraska Department of Roads, Olsson Associates and Lima & Associates.

The intended use of the regional modeling is to determine general street network planning and the level of magnitude analysis. The model will help to determine if we need 2, 4, 6 or 8 lanes on a roadway system or corridor. The analysis includes regional, area and project levels. The model process is a 4 step transportation planning process which is trip generation, trip distribution, mode split and trip assignment. With the generation of computer modeling software, the process becomes more drawn out because we have the ability to make the models more detailed.

The TransCad model was chosen because it has a lot of positive attributes, incorporates new methodology, has a direct GIS connection, and it is capable of specialty attachments, such as air quality modeling.

The model conversion and update includes several steps.

The first step is *network creation*, which looks at the pieces of information you put into the model to get a fully functioning model, and includes:

- Line Geographic Database. Every link, node or intersection from the entire network is included in the line network
- Base Year Model Network. The base year was 2004 and is a snapshot in time of what was actually on the streets with regard to the transportation network as well as the occupied land use.
- Number of Lanes
- Posted Speed Limits
- Functional Classification
- Area Type
- Capacity
- Turn Penalties/Special Lookup
- Traffic Analysis Zones

The next step is *trip generation*. To calculate trip generation, they used 2004 land use data and had two types of trip rates, one being standard trip rates and the other special generators. To generate standard trip rates, they used ITE 7$^{th}$ Edition of Trip Generation and the National Household Transportation Survey. In Lincoln, there are nine special generators, which are areas that typically don't act like a standard area. Examples are the State Penitentiary, the University, and Gateway Mall. They also looked at internal to external and external to external trip tables. The total person trips within the MPO area was calculated at 1.478 million daily trips.

*Network skimming* is the next step. This is the shortest trip path, which is used in determining which route people will take. There is also an iteration process which will factor in traffic congestion.

*Trip Distribution* is the next step. This is how most travel demand models are used and generated. It determines trip length by trip type.

The next step is *mode split*. Non-auto trips, vehicle occupancy and trips by purpose were calculated.

*Trip Assignment* is the next step. They assigned the vehicle trips to the network and looked at several things including level of service.

*Model Calibration/Validation* is the final step. There are four methods used to calibrate and validate the model including percent error, coefficient of determination, root mean-square error and screenline analysis.

There are 4.853 million vehicle miles traveled daily in the Lincoln MPO area, and approximately 119,000 vehicle hours traveled.

When comparing the model to the 1998 model, population has grown by approximately 20,000 and dwelling units by approximately 10,000. Vehicle trips have increased by approximately 60,000 trips per day. Person trips per dwelling unit have decreased slightly from 14.36 in 1998 to 13.98 in 2004.

Phase II steps have included approval from the MPO Technical Committee in January for the calibration of the 2004 model and the generation of the 2030 land use model. They will look at the 2030 transportation alternatives during February through June. The proposed completion date of the 2030 draft plan is in July.

Piernicky concluded his presentation and asked if there were any questions.

Esseks asked how sensitive the model is to changes that take place. Piernicky replied that once they have the 2004 model calibration and the land use prediction, you can make any needed changes and re-run the model. Esseks asked if the model will take into account the number of trips based on gas prices. Piernicky stated that this model is not what you would use to predict that type of change. The model predicts trips based on historical data, so until there is a history of data over a number of years, this model won't be sensitive enough to predict that change.

Carroll asked if the model will be able to establish which generator would be better to be built based on the existing network of roads. Piernicky responded that you can model within a particular zone, and the model will tell you how the travel patterns will shift and what the subsequent need for capital improvements would be.

Esseks asked if this model can be adjusted and run in-house. Piernicky stated that part of their contract is to train City staff to run the model with different alternative scenarios. Singh added that their goal is to train three or four staff to run the model.

Taylor asked about the cost of the model. Brienzo stated that it was $20,000 plus maintenance and upgrade costs.

The meeting concluded at 12:04 p.m.

Respectfully submitted,

Michele Abendroth
Planning Department